CRD summary
The reviewers concluded that nurse-led care was equivalent to non-nurse led clinics and there was no greater risk of poorer outcomes in the nurse-led clinics. These conclusions are likely to be unreliable.

Authors' objectives
To review the effectiveness of nurse-led clinics for patients with coronary heart disease.

Searching
Thirty databases including MEDLINE, CINAHL and EMBASE were searched between Sept 2002 and March 2008 for papers in English or German. An earlier systematic review (Page et al. 2005) was used to identify studies prior to 2002. Published and unpublished papers were considered. Journals and reference lists were handsearched. Full search details were reported.

Study selection
Randomised controlled trials (RCTs) of nurse-led cardiac clinics for adult patients admitted to hospital or general practice with newly diagnosed or existing coronary heart disease. Outcomes relating to reduction in risk factors, health service use, exacerbation of symptoms, compliance, satisfaction and health status were prespecified.

Nurse-led clinic interventions included assessment, monitoring and consultation on risk factors. Education sessions on lifestyle, disease prevention and medication intake were offered by some clinics. Most nurse-led clinics were offered in general practice settings; one was hospital-based with home follow-up. Control groups received usual care (not always defined) which included follow-up by a general practitioner or cardiologist. Studies were conducted in England, Scotland, Australia, China and Canada.

Two reviewers screened studies for inclusion.

Assessment of study quality
Papers were assessed by two independent reviewers for methodological validity prior to inclusion in the review using a standardised critical appraisal instrument from the Joanna Briggs Institute (MAStARI). This included items on randomisation/allocation, blinding, measure methods, group comparison and statistical analysis. Each item was answered as yes, no or unclear. At least five questions out of 10 (for experimental studies) or nine (for case control, cohort and descriptive studies) had to be answered as yes by both reviewers to be included in the meta-analysis.

Any disagreements between the reviewers were resolved through discussion with a third reviewer.

Data extraction
It was unclear how many reviewers performed the data extraction. Quantitative results were reported to have been double-entered to reduce error. The intracluster correlation coefficient was used to adjust for the impact of cluster randomisation. Adjusted p-values were extracted or calculated. Outcomes were grouped as short term (up to six months) and long term (seven months and more). Authors were contacted for additional or missing data.

Methods of synthesis
A random-effects model was used to pool relative risks (categorical data) or weighted mean differences (continuous data) and generate associated 95% confidence intervals. Heterogeneity was assessed using I² and X². Results were given in narrative form where statistical pooling was not appropriate.

Results of the review
Seven RCTs were included in the review (3,246 participants). Follow-up ranged from three months to 10 years (most concluded at one year). Methodological quality of studies that met the cutoff criteria was described as very good but randomisation was poorly described in most studies, assessors were blinded in only two trials and three studies reported
significant differences in baseline characteristics.

No harmful effects were identified in patients who attended nurse-led clinics.

Some risk factors were reduced in the short-term for patients attending nurse-led clinics (blood pressure one RCT and blood lipids one RCT) but these were non-significant at longer term follow-up and substantial heterogeneity was noted.

There was mixed evidence for nurse-led clinics affecting smoking levels (three RCTs).

Perceived quality of life and general health status varied in nurse-led clinic attendees based on three studies with half of the SF-36 domains showing a significant benefit at one year.

Further details are in the full report (Schadewalt et al. 2010).

**Authors' conclusions**

Nurse-led care was equivalent to non-nurse led clinics and there was no greater risk of poorer outcomes in the nurse-led clinics.

**CRD commentary**

This review addressed a clear question with defined inclusion criteria and wide ranging literature searches. The inclusion of two languages plus unpublished research seemed likely to reduce publication and language biases. The review processes were only partly described but seemed likely to reduce potential reviewer error or bias. This was reported to be an update of a previous review so it was unclear why two studies from the original review were excluded.

The quality assessment was incorporated into the inclusion criteria without any assessment of the impact of this decision or information on how many studies were excluded as a result. Although the reviewers were cautious in which studies to pool, use of meta-analysis for just two or three trials can sometimes be misleading. Throughout the review, the authors wrote about nurse-led clinics versus "other clinics" when all of the included study comparisons were "usual care" rather than specific clinics.

The conclusions appear to be overly optimistic given a highly heterogeneous evidence base. The statement that a lack of significant differences demonstrates equivalence of effectiveness is false. Overall the findings from this review should be regarded as unreliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that nurse-led clinics should be encouraged although appropriate qualification and responsibilities as well as the particular structure of the health care system and funding possibilities have to be considered.

**Research:** The authors stated a need for further research on the effectiveness of particular components within nurse-led clinics and recommended a systematic review on cost-effectiveness.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.